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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,362	11/17/2003	Yoshikazu Nagamura	67161-130	1874

7590 12/29/2005

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Washington, DC 20005-3096

EXAMINER

ROSASCO, STEPHEN D

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,362

Applicant(s)

NAGAMURA ET AL.

Examiner

Stephen Rosasco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) 4-11 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/30/05, 11/17/03.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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Detailed Action

Applicant's election without traverse of Group I (claims 1-3) in the reply filed on 11/07/05 is acknowledged.

The disclosure is objected to because of the following informalities: the following are worded awkwardly; page 3, lines 23-26, "Thus, there is caused a problem", and then "produces a seriously bad effect"; page 4, line 30, "the rate of occurring a dimensional fluctuation".

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakayama et al. (6,821,686).

Nakayama et al. teach (see claims) the claimed limitations including a method of repairing a clear area defect in a graytone mask.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (6,821,686) in view of

Nakayama et al. teach (see claims) a method of repairing a clear area defect in a graytone mask, wherein the graytone mask comprises an opaque part, a transmission part and a graytone part including an opaque pattern, wherein the clear area defect causes the graytone part to differ from an intended graytone part including an intended opaque pattern which does not exceed a resolution limit of an exposure apparatus using the intended graytone mask so that the intended graytone part has a graytone effect in which an amount of light transmitted through the intended graytone part is attenuated thereby selectively varying a thickness of a photoresist film to be exposed through the graytone mask, wherein the clear area defect comprises a clear area in the opaque pattern of the graytone part, and the clear area corresponds to an opaque area of the intended opaque pattern of the intended graytone part which is not present in the opaque pattern of the graytone part, the method comprising forming a translucent film over at least a portion of the clear area, wherein the graytone part with the translucent film provides a graytone effect substantially equal to the graytone effect of the intended graytone part.

The teachings of Nakayama et al. differ from those of the applicant in that the applicant teaches that the semitransparent portion is formed to extend from an area inside of the complete pattern to an area outside of it perpendicular to a main surface of said transparent substrate.

The use of the semitransparent portion is to adjust the amount of light that is needed to correct for the error in the exposure in the area of the clear defect. It is known in the art that uses Optical Proximity Correction with semitransparent masks to incorporate the use of semitransparent features in conjunction with the main pattern in order to produce the desired

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exposure effect. The prior art teaches the importance of having the transmission adjusting feature proximate to the main pattern, although it may not designate the perpendicular direction specifically.

Therefore, it would have been obvious to one having ordinary skill in the art to take the teachings of Nakayama et al. and combine them with a knowledge of OPC design in order to make the claimed invention because the incorporation of a semitransparent feature that extends in a perpendicular direction from the main pattern would be an obvious design in that this is the region where the optical effect of the interference of light with the main pattern is to be corrected.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'S. Rosasco', with a stylized, elongated initial 'S'.

S. Rosasco
Primary Examiner
Art Unit 1756

S. Rosasco
12/27/05